

Adequacy of CAMELS Rating System in Measuring the Efficiency of Banking Industry: A Retrospect

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Abstract--- CAMEL method was devised as a supervision tool to measure the efficiency of banks based on different parameters. The regulators are using on site and off site surveillance system to assess the financial soundness of banks. CAMEL rating system encourages transparency, evolution and transformation among banks. This method clearly identifies the institutional strengths and challenges in all financial and managerial areas. In this paper the researcher attempted to measure the efficiency of banks from public sector and private sector based on market capitalization rate. Among selected ten banks, five are from public sector and remaining five are from private sector banks to ensure the consistency in the selection procedure. One ratio each is selected based on parameters of CAMEL rating system like capital Adequacy, Asset Quality, Management Efficiency, Earning Capacity and Liquidity per parameter to explain the efficiency level of banks.

Keywords--- CAMEL, Efficiency, Capital Adequacy, Asset Quality, Management Efficiency, Earning Capacity, Liquidity.

I. INTRODUCTION

CAMELS rating system is developed in 1979 in the U.S as a supervisory rating system which will help to analyze the overall condition of banks. The Uniform Financial Institutions Rating System (UFIRS) commonly known as the CAMELS rating system, was adopted by the Federal Financial Institutions Examination Council (FFIEC) on November 13, 1979.its started in the U.S., but now it started to implement globally by various banking supervisory regulators following a recommendation by the U.S federal Reserve. The ratings are open to the top management to prevent a possible bank run but not released to the public. CAMELS is an acronym stands for capital adequacy, Assets, Management Quality, Earnings, liquidity and Sensitivity to Market Risk.

The CAMEL model helps to analyse the efficiency of banks quantitatively and qualitatively. Quantitative part depends on the ratios used in the analysis and qualitative part depends on the subjective elements driving the financial in situation's operations. The availability of financial performance information is the key to the success of the depth and quality of the CAMEL analysis. CAMEL analysis will

give an insight into all the aspects of an organization by considering many factors responsible for organisaitonal success. CAMELS rating system works on a scale of 1 to 5; the rating of 1 is considered the best and the rating of 5 is considered the worst for each factor.

In 1994, the Board of Financial Supervision (BFS) has been established by the RBI to foster the supervisory mechanism to suit the changing needs of a strong and stable financial system. The BFS has made sub-committee to routinely examine auditing practices, quality and coverage. In 1995, under the chairmanship of Shri S Padmanabhan RBI had set up a working group to review the banking supervision system. The group had given certain recommendations and suggestions relating to a rating system for domestic and foreign banks based on the international CAMEL model combining financial system and control. As per the recommendation of the working committee from July 1998 CAMELS rating system became part of inspection and auditing cycle in the financial institutions. CAMELS evaluate banks on the following five parameters

1. Capital adequacy: As part of Capital Adequacy, various ratios can be used to measure Capital competence. The sound capital base will boost the confidence of depositors. This parameter will help to analyse whether the institutions comply with regulations pertaining to risk-based net worth requirement. To ensure a fair rating, the institutions must comply with interest and dividend rules and practices.
2. Asset Quality: The earnings of the institution will be reflected by this ratio. This parameter will help to assess the investment risk factors that the company may face. To a great extend the asset quality is reflected by the efficiency of an institution's investment policies and practices. Here capital adequacy ratio has been considered for the study.
3. Management: this parameter covers the ability of the management to ensure the safe operation of the institution as they comply with the internal and external regulations in the financial sector.
4. Earnings: Earning capacity of the institution has to be examined to ensure the interest of many concerned ones inside and outside the institution. To determine this, the examiners are assessing the company's growth, stability, net interest margin and the quality of the company's existing assets.

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5. Liquidity: the ability of the company to convert their assets into cash is very crucial for its existence. To determine the liquidity position, usually the examiners are depending on short-term volatile financial resources.
6. Sensitivity: sensitivity to market is usually determined by monitoring the credit concentrations of the management. This will help to see how lending to specific industries affect an institution. These loans include agricultural lending, medical lending, credit card lending, and energy sector lending. Exposure to foreign exchange, commodities, equities and derivatives are also included in rating the sensitivity of a company to market risk.

II. REVIEW OF LITERATURE

There is an extensive literature addressing banking performance evaluation. The CAMELS framework in particular is a widely-used methodology for bank performance assessment, using particular financial ratios to reflect different aspects of a bank's performance (Sahajwala and Van der Bergh, 2000). Barr et al (2002) found that the CAMEL ratings were consistent with the efficiency scores obtained through Data Envelopment Analysis.

The work of Beaver (1966, 1968) and Altman (1968) initiated the use of financial ratios for bankruptcy prediction. Maishanu (2004) extended Altman's z-score model for banks, suggesting eight financial ratios to assess the financial health of a bank. Mous (2005) applied decision tree models and multiple discriminant models for bankruptcy prediction in banks, using profitability, liquidity, leverage, and turnover ratios, and suggested that the decision tree approach performed better than the discriminant model approach.

Dash and Das (2013) compared the performance of public sector banks with private/foreign banks under the CAMELS framework. They found that private/foreign banks fared better than public sector banks on most of the CAMELS factors in the 3 study period, and that the two contributing factors for the better performance of private/foreign banks were Management Soundness and Earnings and Profitability. Njoku (2011) studied the factor structure of CAMEL in order to develop an anatomic model of bank performance, using factor weights. The anatomy framework modelled a bank's financial situation in seven structural parameters, including market presence, macro-economic condition, deposit mobilisation, prudence, earnings quality, market power and capital confidence. Njoku and Inanga (2012) applied the anatomic model in interpreting critical issues commonly reported in the 2008–2009 global banking crises.

Several studies have applied factor analysis to develop rating methods for life insurance service providers. Hsiao (2006, 2008) developed the CAMEL-S model based on fourteen financial variables and reported its consistency with DEA efficiency scores. Yakob et al (2012) applied factor analysis to a set of twenty-three financial ratios to develop a CAMEL model for rating life insurance service providers.

Klomp and de Haan (2011) applied dynamic factor analysis with a set of twenty-five financial variables under the CAMELS framework in order to construct measures for bank risk. Popovska (2014) applied factor analysis to the six CAMELS dimensions in order to develop a measure for bank stability. Maliszewski (2009) and Bhattacharyay (2011) had also proposed such a measure.

Thus, several studies have used factor analysis to develop composite measures of bank performance and risk, particularly in the context of the CAMELS model.

Objectives of the Study

1. To measure the efficiency of public sector banks and private sector banks in terms of capital adequacy, asset quality, management efficiency, earning capacity and liquidity
2. Compare the efficiency of public sector banks with private sector banks based on CAMELS rating system.

Limitations of the Study

Only 10 banks have taken from public and private sector together. Many banks are there to evaluate still based on CAMEL. At the same time the period of study restricted to three years. It can make a bias on the researcher to reach a conclusion.

III. RESEARCH METHODOLOGY

A. Data Collection

Based on market capitalization, five banks have been selected from public sector and another five banks selected from private sector. The official website of the banks have been used for the data collection.

B. Selection of Banks

Market capitalization has used as a benchmark for the selection of banks from public sector and private sector.

Public Sector Banks

Banks	Market capitalization (Rs Cr)
SBI	217437.47
BANK OF BARODA	38792.46
PNB	30419.31
CANARA BANK	17482.68
IDBI BANK	16851.40

Private Sector Banks

Banks	Market capitalization (Rs Cr)
HDFC BANK	360180.65
ICICI BANK	165906.19
KOTAK MAHINDRA BANK	146504.77
AXIS BANK	124372.33
INDUSIND BANK	79549.58

C. Period of Study

Three financial years have been considered for the study namely; 2013-2014, 2014-2015, 2015-2016 and taken the mean of efficiency for all the banks selected for the study.

IV. ANALYSIS AND INTERPRETATION

Public Sector Banks

BANKS	C Capital adequacy ratio	A Assets turnover ratio	M Business per employee	E Return on Assets	L Current ratio
SBI	12.69	0.08	135324243.89	0.56	0.05
BANK OF BARODA	12.68	0.07	140577652.22	0.12	0.03
PNB	12.09	0.08	129218561.69	0.17	0.02
CANARA BANK	10.76	0.09	148598869.27	0.16	0.03
IDBI BANK	11.70	0.08	273542472.85	-0.13	0.06

Among public sector banks:

1. Based on capital adequacy ratio, it's clear from the table that State Bank of India has sound capital base which strengthens the confidence of depositors.
2. Asset quality ratio shows that bank of Baroda is good in taking the credit decisions made by the bankers.
3. Management efficiency ratio proves that IDBI bank is having high ratio and their employees are making more business in the financial sector
4. Based on earnings ratios, State Bank of India is making more earnings compared to other banks in the financial industry
5. Finally, regarding liquidity IDBI bank is more liquid compared to other banks.

Private Sector Banks

BANKS	C Capital adequacy ratio	A Assets turnover ratio	M Business per employee	E Return on Assets	L Current ratio
HDFC BANK	16.13	0.10	2080072796.78	1.73	0.06
ICICI BANK	17.12	0.08	108161341.67	1.57	0.09
KOTAK MAHINDRA BANK	17.45	0.11	76775574.41	1.52	0.04
AXIS BANK	15.48	0.09	2285933364.06	1.59	0.04
INDUSIND BANK	13.81	0.10	75857338.84	1.63	0.00

Among private sector banks:

1. Based on capital adequacy ratio, it's clear from the table that Kotak Mahindra Bank has sound capital base which strengthens the confidence of depositors.
2. Asset quality ratio shows that Axis Bank is good in taking the credit decisions made by the bankers.
3. Management efficiency ratio proves that Axis bank is having high ratio and their employees are making more business in the financial sector
4. Based on earnings ratios, HDFC bank Ltd is making more earnings compared to other banks in the financial industry
5. Finally, regarding liquidity ICICI bank is more liquid compared to other banks.

V. FINDINGS AND CONCLUSION

When we compare public sector banks with private sector banks based on performance, it's clear that the efficiency level is high in private sector banks compared to public sector banks in terms of capital adequacy, management efficiency, earning capacity and liquidity. Based on this study regarding asset

quality, public sector bank, BOB is having high rate compared to other selected banks.

1. Regarding capital adequacy, kotak Mahindra Bank is having Rating 1 which means.
 - Strong earnings performance.
 - Well managed and controlled growth.
 - Competent management able to analyze the risks associated with the activities in determining appropriate capital levels.
 - Reasonable dividends and ability to raise new capital.
 - Low volume of problem assets.
2. Based on Asset quality, Bank of Baroda is with rating 1 which exhibits.
 - Concentrations of credits and loans to insiders provide minimal risk.
 - Efficient loan portfolio management, close monitoring of problem loans.
 - Adequate Loan Loss Reserves in accordance with CBI's regulations.
 - Non credit assets pose no loss threat.
3. Management quality ratios proved AXIS bank is with rating 1 which means.
 - A thorough understanding of the risks associated with the bank's activities.
 - A strong financial performance in all areas.
 - Appropriate understanding and response to changing economy.
 - Planning, control, implementation of internal policies.
 - Appropriate audit function.
 - No evidence of self-dealing.
 - Strong cooperation and interaction between the Board of Directors and the management and successful delegation of authority
 - Competent and trained staff at all levels.
4. Regarding Earning capacity, HDFC Bank Ltd is with rating 1 which displays.
 - Sufficient income to meet reserve requirements, provide capital growth and pay reasonable dividends to shareholders.
 - Strong budgeting, planning and control of income and expenses.
 - Positive trends in major income and expenses categories.
 - Minimal reliance on extraordinary items and non-traditional sources of income.
5. Based on liquidity, ICICI Bank Ltd is with rating 1 which shows that.
 - Sufficient liquid assets to meet loan demand and unexpected deposit reduction.
 - Little reliance on inter-bank market.
 - Strong and sophisticated planning, control and monitoring.
 - Existence of an contingency plan.

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